2024 Region 5 Collegiate Soil Judging Contest
Kansas State University
Sept. 23-27, 2024

SCORING		
A.		
B.		
C.		
D.		
E.		
Total:		

Team	**Key**
Contestant	**Pit 1**
Site	**Hooray**
Number of Horizons	**5**
Profile Depth (cm)	**100+ cm**
Nail Depth (cm)	**43 cm**

A. Site Characteristics

Part A Score _____

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	____ Alluvium	__X__ 0 to <2 % *1%*	____ Summit
____ Depression	____ Colluvium	____ 2 to <5 %	____ Shoulder
____ Dune	__X__ Eolian Sand	____ 5 to <9 %	____ Backslope
_X__ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	____ Footslope
____ Floodplain	____ Loess	____ 14 to <18 %	__X__ None
____ Terrace/Paleoterrace		____ 18 to <25 %	
		____ ≥25 %	

B. Soil Morphology

Part B Score _____

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
11	C	2	SBK	-	-	-	-	10YR	4	3	-	S	91	3	N	-	A	-	1	
23	C	1	SBK	5	P 5R ¾	FED	FM	10YR	4	3	-	S	91	2	N	-	A	-	2	
43	C	1 or 2	SBK	12	P 7.5YR5/8	FED	FM	10YR	5	3	-	S	92	4	N	-	E&B/A	t	1	
80	C	2	SBK	25	D 10YR5/6	FED	FM	10YR	5	3	-	S	91	5	N	-	E&B/A	t	2	
100+	-	2	SBK	7	P 7.5YR4/6	FED	FM	10YR	4	3	-	S	91	5	N	-	E&B/A	t	3	

C. Soil Hydrology and Profile Properties **Part C Score _____**

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	_X_ Very High	_X_ Very High	_X_ Negligible or Ponded	____ Very Low (<7.5 cm)	____ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	____ High	____ High	____ Very Low	_X_ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	____ Moderately High	____ Low	____ Medium (15.0 to <22.5 cm)	____ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	____ Moderately Low	____ Moderately Low	____ Medium	____ High (≥ 22.5 cm)	____ Class 4 (25 to <50 cm)
_X_ Very Deep (≥ 150 cm)	____ Low	____ Low	____ High		_X_ Class 5 (<25 cm)
	____ Very Low	____ Very Low	____ Very High	*150 cm x 0.05 = 7.5 cm AWHC*	*Chroma 2 depletions starting in 2nd*

D. Soil Classification **Part D Score _____**

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
____ Mollic	____ Albic	____ Vertisol	____ Alb-	____ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	_X_ Sandy
_X_ Ochric	_X_ Argillic	____ Mollisol	_X_ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	_X_ Alfisol	____ Fluv-	____ Dystr-	____ Upper 50 cm of argillic	____ Coarse Loamy
	____ Cambic	____ Inceptisol	____ Orth-	_X_ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	____ Entisol	____ Psamm-	____ Epi-		____ Coarse Silty
	____ Natric		____ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	____ Fine Silty
	____ Secondary Carbonates			____ Hapl/Hap-	_X_ 25-100 cm	____ Clayey
	_X_ Lamellae			____ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	____ Fine
	____ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	____ Slickensides or Pressure Faces			____ Usti/Ust		____ Sandy-skeletal
	_X_ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					

E. Site Interpretations **Part E Score _____**

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	____ Slight	____ Slight	____ FIHS Present
____ Moderate	____ Moderate	____ Moderate	_X_ FIHS Absent
_X_ Severe	_X_ Severe	_X_ Severe	
Reason: ____1_____	Reason: ____3_____	Reason: ____3_____	Indicator: _____

Comments: Lamellae present in 3rd-5th horizons and have a combined thickness of >15 cm. See p. 358 in Keys to Taxonomy for particle size control section. Krotovina were present in 3rd-5th horizons. Particle size analysis shows this right at the boundary between S and FS. We called LFS in the 1st and 2nd and LS in the three bottom horizons in the field. Depletions were present in the 2nd, but no FIHS were met.

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Team	**Key**
Contestant	**Pit 2**
Site	**Hooray**
Number of Horizons	**4**
Profile Depth (cm)	**120+ cm**
Nail Depth (cm)	**76 cm**

A. Site Characteristics

Part A Score _____

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	____ Alluvium	____ 0 to <2 %	____ Summit
____ Depression	____ Colluvium	____ 2 to <5 %	____ Shoulder
_X_ Dune	_X_ Eolian Sand	____ 5 to <9 %	_X_ Backslope
____ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	____ Footslope
____ Floodplain	____ Loess	____ 14 to <18 %	____ None
____ Terrace/Paleoterrace		_X_ 18 to <25 % *20%*	
		____ ≥25 %	

B. Soil Morphology

Part B Score _____

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
21	C	1	SBK	-	-	-	-	10YR	5	3	-	S	92	5	N	-	A	-	-	
36	G	1	SBK	-	-	-	-	10YR	5	3	-	S	95	3	N	-	E	-	-	
76	G	2	SBK	-	-	-	-	10YR	5	3	-	S	95	3	N	-	E&B	t	1	
120+	-	2	SBK	-	-	-	-	10YR	5	3	-	S	95	3	N	-	E&B	t	2	

C. Soil Hydrology and Profile Properties **Part C Score _____**

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	_X_ Very High	_X_ Very High	____ Negligible or Ponded	____ Very Low (<7.5 cm)	_X_ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	____ High	____ High	_X_ Very Low	_X_ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	____ Moderately High	____ Low *graded back*	____ Medium (15.0 to <22.5 cm)	____ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	____ Moderately Low	____ Moderately Low	____ Medium	____ High (≥ 22.5 cm)	____ Class 4 (25 to <50 cm)
_X_ Very Deep (≥ 150 cm)	____ Low	____ Low	____ High		____ Class 5 (<25 cm)
	____ Very Low	____ Very Low	____ Very High	*150 cm x 0.05 = 7.5 cm AWHC*	

D. Soil Classification **Part D Score _____**

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
____ Mollic	____ Albic	____ Vertisol	____ Alb-	____ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	_X_ Sandy
_X_ Ochric	____ Argillic	____ Mollisol	____ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	____ Alfisol	____ Fluv-	____ Dystr-	____ Upper 50 cm of argillic	____ Coarse Loamy
	____ Cambic	____ Inceptisol	____ Orth-	____ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	_X_ Entisol	_X_ Psamm-	____ Epi-		____ Coarse Silty
	____ Natric		____ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	____ Fine Silty
	____ Secondary Carbonates			____ Hapl/Hap-	_X_ 25-100 cm	____ Clayey
	_X_ Lamellae			____ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	____ Fine
	____ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	____ Slickensides or Pressure Faces			_X_ Usti/Ust		____ Sandy-skeletal
	____ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					

E. Site Interpretations **Part E Score _____**

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	____ Slight	____ Slight	____ FIHS Present
____ Moderate	____ Moderate	____ Moderate	_X_ FIHS Absent
_X_ Severe	_X_ Severe	_X_ Severe	
Reason: ____1_____	Reason: ____6_____	Reason: ____6_____	Indicator: _____

Comments: Lamellae in the 3rd and 4th horizons with a combined thickness of <15 cm. Bright sand coats (10YR 5/6) throughout. Particle size analysis shows this as a sand, but right at the boundary between FS and S. We initially called it LFS in the 1st and 2nd and LS in the bottom horizons in the field. This is an example of the Langdon soil series (mixed, mesic Lamellic Ustipsamments).

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Team	**Key**
Contestant	**Pit 3**
Site	**Hooray**
Number of Horizons	**6**
Profile Depth (cm)	**105+ cm**
Nail Depth (cm)	**49**

A. Site Characteristics

Part A Score _____

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	____ Alluvium	_X_ 0 to <2 % *0%*	____ Summit
____ Depression	____ Colluvium	____ 2 to <5 %	____ Shoulder
____ Dune	_X_ Eolian Sand	____ 5 to <9 %	____ Backslope
_X_ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	____ Footslope
____ Floodplain	____ Loess	____ 14 to <18 %	_X_ None
____ Terrace/Paleoterrace		____ 18 to <25 %	
		____ ≥25 %	

B. Soil Morphology

Part B Score _____

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
10	C	1	GR	2	D 10YR3/4	FED 10YR5/2	FM	10YR	4	2	-	S	88	2	N	-	A	-	1	
19	G	1	SBK	4	D 10YR3/4	FED 10YR5/2	FM	10YR	4	2	-	S	96	1	N	-	A	-	2	
49	A	0	MA	4	D or P 10YR5/6	DMX	FM	10YR	6	2	-	S	92	2	N	-	B	g	-	
76	C	1	SBK	14	D or P 10YR3/6	DMX	FM	10YR	4	2	-	S	94	2	N	2	B	gb	1	
90	G	1	SBK	10	D or P 10YR3/6	DMX	FM	10YR	4	2	-	S	94	1	N	2	B	gb	2	
105+	-	1	SBK	10	D 10YR5/4	DMX	FM	10YR	4	2	-	S	94	1	N	2	B	gb	3	

C. Soil Hydrology and Profile Properties **Part C Score _____**

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	_X_ Very High	_X_ Very High	_X_ Negligible or Ponded	____ Very Low (<7.5 cm)	____ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	____ High	____ High	____ Very Low	_X_ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	____ Moderately High	____ Low	____ Medium (15.0 to <22.5 cm)	____ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	____ Moderately Low	____ Moderately Low	____ Medium	____ High (≥ 22.5 cm)	____ Class 4 (25 to <50 cm)
_X_ Very Deep (≥ 150 cm)	____ Low	____ Low	____ High		_X_ Class 5 (<25 cm)
	____ Very Low	____ Very Low	____ Very High	*0.05*150=7.50 cm AWHC*	

D. Soil Classification **Part D Score _____**

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
____ Mollic	____ Albic	____ Vertisol	____ Alb-	____ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	_X_ Sandy
_X_ Ochric	____ Argillic	____ Mollisol	_X_ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	____ Alfisol	____ Fluv-	____ Dystr-	____ Upper 50 cm of argillic	____ Coarse Loamy
	_X_ Cambic	_X_ Inceptisol	____ Orth-	_X_ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	____ Entisol	____ Psamm-	____ Epi-		____ Coarse Silty
	____ Natric		____ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	____ Fine Silty
	____ Secondary Carbonates			____ Hapl/Hap-	_X_ 25-100 cm	____ Clayey
	____ Lamellae			____ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	____ Fine
	____ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	____ Slickensides or Pressure Faces			____ Usti/Ust		____ Sandy-skeletal
	_X_ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					

E. Site Interpretations **Part E Score _____**

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	____ Slight	____ Slight	_X_ FIHS Present
____ Moderate	____ Moderate	____ Moderate	____ FIHS Absent
_X_ Severe	_X_ Severe	_X_ Severe	
Reason: ____1_____	Reason: ____3_____	Reason: ____3_____	Indicator: ___S5_____

Comments: The 2nd horizon has the color patterns expected for S6 – Stripped Matrix, especially towards the right side of the control section. However, it did not meet the 10% volume requirement. We thought these soil textures were LS or LFS in the field, but PSA showed they were all sands. This soil is closest to the Plev series (mixed, mesic Mollic Psammaquents), though this one met the Cambic requirements in aquic conditions, making it an Inceptisol.

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Total:		

Team	**Key**
Contestant	**Pit 4**
Site	**Hooray**
Number of Horizons	**4**
Profile Depth (cm)	**110+ cm**
Nail Depth (cm)	**76 cm**

A. Site Characteristics **Part A Score _____**

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	____ Alluvium	____ 0 to <2 %	____ Summit
____ Depression	____ Colluvium	_X__ 2 to <5 % *2.5%*	_X__ Shoulder
_X__ Dune	_X__ Eolian Sand	____ 5 to <9 %	____ Backslope
____ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	____ Footslope
____ Floodplain	____ Loess	____ 14 to <18 %	____ None
____ Terrace/Paleoterrace		____ 18 to <25 %	
		____ ≥25 %	

B. Soil Morphology **Part B Score _____**

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
16	C	1	SBK	-	-	-	-	10YR	5	3	-	S	94	1	N	-	A	-	-	
51	G	1	SBK	-	-	-	-	10YR	5	3	-	S	95	2	N	-	B	w	1	
78	C	1	SBK	5	D 10YR4/4	-	FM	10YR	5	3	-	S	94	3	N	-	B	w	2	
110+	-	0	MA	7	D or P 10YR4/6	-	FM	10YR	5	3	-	S	94	3	N	-	C	-	-	

C. Soil Hydrology and Profile Properties **Part C Score _____**

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	_X__ Very High	_X__ Very High	_X__ Negligible or Ponded	____ Very Low (<7.5 cm)	_X__ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	____ High	____ High	____ Very Low	_X__ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	____ Moderately High	____ Low	____ Medium (15.0 to <22.5 cm)	____ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	____ Moderately Low	____ Moderately Low	____ Medium	____ High (≥ 22.5 cm)	____ Class 4 (25 to <50 cm)
_X__ Very Deep (≥ 150 cm)	____ Low	____ Low	____ High		____ Class 5 (<25 cm)
	____ Very Low	____ Very Low	____ Very High	150 cm * 0.05 = 7.5 cm AHWC	

D. Soil Classification **Part D Score _____**

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
____ Mollic	____ Albic	____ Vertisol	____ Alb-	____ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	_X__ Sandy
_X__ Ochric	____ Argillic	____ Mollisol	____ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	____ Alfisol	____ Fluv-	____ Dystr-	____ Upper 50 cm of argillic	____ Coarse Loamy
	_X__ Cambic	_X__ Inceptisol	____ Orth-	____ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	____ Entisol	____ Psamm-	____ Epi-		____ Coarse Silty
	____ Natric		_X__ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	____ Fine Silty
	____ Secondary Carbonates			_X__ Hapl/Hap-	_X__ 25-100 cm	____ Clayey
	____ Lamellae			____ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	____ Fine
	____ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	____ Slickensides or Pressure Faces			____ Usti/Ust		____ Sandy-skeletal
	____ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					

E. Site Interpretations **Part E Score _____**

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	_X__ Slight	_X__ Slight	____ FIHS Present
____ Moderate	____ Moderate	____ Moderate	_X__ FIHS Absent
_X__ Severe	____ Severe	____ Severe	
Reason: ____1_____	Reason: _____	Reason: _____	Indicator: _____

Comments: This soil is closest to and is mapped as the Tivin series (mixed, mesic Typic Ustipsamments). However, we called a Bw instead of a C. There were a lot of bright colored sand coatings, which are not concentrations and are brighter than the matrix.

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Total:		

Team	**Key**
Contestant	**Pit 5**
Site	**Pfister**
Number of Horizons	**4**
Profile Depth (cm)	**120+ cm**
Nail Depth (cm)	**67 cm**

A. Site Characteristics

Part A Score _____

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	_X__ Alluvium	_X__ 0 to <2 %	____ Summit
_X__ Depression	____ Colluvium	____ 2 to <5 %	____ Shoulder
____ Dune	_X__ Eolian Sand	____ 5 to <9 %	____ Backslope
____ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	_X__ Footslope
____ Floodplain	____ Loess	____ 14 to <18 %	____ None
____ Terrace/Paleoterrace		____ 18 to <25 %	
		____ ≥25 %	

B. Soil Morphology

Part B Score _____

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
14	C	1	GR	7	D 7.5YR3/4	-	FM	7.5YR	3	2	-	LS	85	11	N	-	A	-	-	
36	A	2	SBK	7	D 10YR3/4	FED	FM	10YR	3	2	-	SL	82	14	Y	-	BA	-	-	
67	G	0	MA	10	D 10YR3/4	DMX	FM	10YR	4	2	-	SCL	75	22	N	-	C	g	1	
120+	-	0	MA	-	-	-	FM	10YR	5	6	-	COS	95	5	N	2	C	-	2	

C. Soil Hydrology and Profile Properties

Part C Score _____

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	____ Very High	____ Very High	_X__ Negligible or Ponded	____ Very Low (<7.5 cm)	____ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	_X__ High	____ High	____ Very Low	_X__ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	_X__ Moderately High	____ Low	____ Medium (15.0 to <22.5 cm)	____ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	____ Moderately Low	____ Moderately Low	____ Medium	____ High (≥ 22.5 cm)	__X_ Class 4 (25 to <50 cm)
_X__ Very Deep (≥ 150 cm)	____ Low	____ Low	____ High		__X_Class 5 (<25 cm)
	____ Very Low	____ Very Low	____ Very High	*(67*0.15)+(83*0.05) = 14.2*	

D. Soil Classification

Part D Score _____

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
_X__ Mollic	____ Albic	____ Vertisol	____ Alb-	____ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	_X__ Sandy
____ Ochric	____ Argillic	_X__ Mollisol	_X__ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	____ Alfisol	____ Fluv-	____ Dystr-	____ Upper 50 cm of argillic	____ Coarse Loamy
	_X__ Cambic	____ Inceptisol	____ Orth-	____ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	____ Entisol	____ Psamm-	_X__ Epi-		____ Coarse Silty
	____ Natric		____ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	____ Fine Silty
	____ Secondary Carbonates			____ Hapl/Hap-	_X__ 25-100 cm	____ Clayey
	____ Lamellae			____ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	____ Fine
	_X__ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	____ Slickensides or Pressure Faces			____ Usti/Ust		____ Sandy-skeletal
	_X__ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					

E. Site Interpretations

Part E Score _____

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	____ Slight	____ Slight	_X__ FIHS Present
____ Moderate	____ Moderate	____ Moderate	____ FIHS Absent
_X__ Severe	_X__ Severe	_X__ Severe	
Reason: ____1_____	Reason: ____3_____	Reason: ____3_____	Indicator: _F6 or F8_____

Comments: The 3rd horizon is an "arenapan", which consists of interlocking sand grains that are very hard to break through, but dissolve in water. They would be root limiting, but arenapan was not included in the guidebook, and thus is NOT going to be considered root limiting in this instance. The Soil Wetness Class was 4 based on the Guidebook, yet the soil did meet FIHS F6 and F8. Thus, credit for both wetness class 4 and 5. This soil is closest to the Plevna series - coarse-loamy, mixed, superactive, mesic Fluvaquentic Endoaquolls. There is a stream in the next section to the west not visible from this site, and this particular location is a depression, thus we noted it was occasionally ponded rather than flooded.

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SCORING		
A.		
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E.		
Total:		

Team	**Key**
Contestant	**Pit 6**
Site	**Pfister**
Number of Horizons	**5**
Profile Depth (cm)	**130+ cm**
Nail Depth (cm)	**64 cm**

A. Site Characteristics

Part A Score _____

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	_X__ Alluvium	____ 0 to <2 %	_X__ Summit
____ Depression	____ Colluvium	_X__ 2 to <5 % *2.5%*	____ Shoulder
____ Dune	____ Eolian Sand	____ 5 to <9 %	____ Backslope
____ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	____ Footslope
____ Floodplain	____ Loess	____ 14 to <18 %	____ None
_X__ Terrace/Paleoterrace		____ 18 to <25 %	
		____ ≥25 %	

B. Soil Morphology

Part B Score _____

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
18	C	2	SBK	-	-	-	-	10YR	3	3	-	LS	85	13	N	-	A	-	-	
39	G	2	SBK	3	F 10YR4/4	-	FM	10YR	4	3	-	LS	87	11	N	-	B	w	1	
64	C	2	SBK	12	F 10YR4/4	-	FM	10YR	5	3	-	LFS	87	9	N	-	B	w	2	
90	C	2	SBK	12	P 7.5YR4/4	-	FM	10YR	5	3	-	LFS	85	12	N	-	B	w	3	
130+	-	2	SBK	10	D 10YR3/6	FED	FM	10YR	4	3	-	LS	87	9	N	2	B	w	4	

C. Soil Hydrology and Profile Properties

Part C Score _____

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	____ Very High	____ Very High	_X__ Negligible or Ponded	____ Very Low (<7.5 cm)	____ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	_X__ High	_X__ High	____ Very Low	____ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	____ Moderately High	____ Low	____ Medium (15.0 to <22.5 cm)	_X__ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	____ Moderately Low	____ Moderately Low	____ Medium	_X__High (≥ 22.5 cm)	____ Class 4 (25 to <50 cm)
_X__ Very Deep (≥ 150 cm)	____ Low	____ Low	____ High		____ Class 5 (<25 cm)
	____ Very Low	____ Very Low	____ Very High	*0.15 * 150 cm = 22.5 cm*	

D. Soil Classification

Part D Score _____

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
____ Mollic	____ Albic	____ Vertisol	____ Alb-	____ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	_X__ Sandy
_X__ Ochric	____ Argillic	____ Mollisol	____ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	____ Alfisol	____ Fluv-	____ Dystr-	____ Upper 50 cm of argillic	____ Coarse Loamy
	_X__ Cambic	_X__ Inceptisol	____ Orth-	____ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	____ Entisol	____ Psamm-	____ Epi-		____ Coarse Silty
	____ Natric		_X__ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	____ Fine Silty
	____ Secondary Carbonates			_X__ Hapl/Hap-	_X__ 25-100 cm	____ Clayey
	____ Lamellae			____ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	____ Fine
	____ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	____ Slickensides or Pressure Faces			____ Usti/Ust		____ Sandy-skeletal
	_X__ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					

E. Site Interpretations

Part E Score _____

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	____ Slight	____ Slight	____ FIHS Present
____ Moderate	_X__ Moderate	_X__ Moderate	_X__ FIHS Absent
_X__ Severe	____ Severe	____ Severe	
Reason: ____1_____	Reason: ____3_____	Reason: ____3_____	Indicator: _____

Comments: This soil is closest to and mapped as the Dillwyn series - mixed, mesic Aquic Ustipsamments. However, calling horizons with structure Bw horizons changes the classification. Surface runoff was graded back for good vegetation.

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SCORING		
A.		
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E.		
Total:		

Team	**Key**
Contestant	**Pit 7**
Site	**Pfister**
Number of Horizons	**6**
Profile Depth (cm)	**110+ cm**
Nail Depth (cm)	**73 cm**

A. Site Characteristics

Part A Score _____

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	_X__ Alluvium	_X__ 0 to <2 % *1%*	____ Summit
____ Depression	____ Colluvium	____ 2 to <5 %	____ Shoulder
____ Dune	_X__ Eolian Sand	____ 5 to <9 %	____ Backslope
_X__ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	_X__ Footslope
____ Floodplain	____ Loess	____ 14 to <18 %	____ None
____ Terrace/Paleoterrace		____ 18 to <25 %	
		____ ≥25 %	

B. Soil Morphology

Part B Score _____

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
13	C	0	SGR	4	F 7.5YR3/3	-	FM	10YR	3	2	-	S	90	6	N	-	A	-	1	
30	G	1 or 2	SBK	5	F 7.5YR3/3	-	FM	10YR	3	2	-	S	90	5	N	-	A	-	2	
73	C	2	SBK	7	P 10YR5/8	DMX	FM	10YR	6	2	-	S	95	2	N	-	B	g	1	
91	A	2	SBK	7	P 10YR5/6	DMX	FM	10YR	6	2	-	S	95	2	N	-	B	g	2	
104	C	1	SBK	4	P 10YR4/6	-	FM	10YR	4	2	-	S	90	4	N	-	B	w	-	
110+	-	1	SBK	3	P 10YR5/8	FED	FM	10YR	4	4	-	LCOS	85	13	N	2	B	t	-	

C. Soil Hydrology and Profile Properties **Part C Score _____**

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	_X__ Very High	_X__ Very High	_X__ Negligible or Ponded	____ Very Low (<7.5 cm)	____ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	____ High	____ High	____ Very Low	_X__ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	____ Moderately High	____ Low	____ Medium (15.0 to <22.5 cm)	____ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	____ Moderately Low	____ Moderately Low	____ Medium	____ High (≥ 22.5 cm)	_X__ Class 4 (25 to <50 cm)
_X__ Very Deep (≥ 150 cm)	____ Low	____ Low	____ High		____ Class 5 (<25 cm)
	____ Very Low	____ Very Low	____ Very High	0.05*150cm=7.5 cm AWHC	

D. Soil Classification **Part D Score _____**

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
_X__ Mollic	____ Albic	____ Vertisol	____ Alb-	____ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	_X__ Sandy
____ Ochric	____ Argillic	_X__ Mollisol	_X__ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	____ Alfisol	____ Fluv-	____ Dystr-	____ Upper 50 cm of argillic	____ Coarse Loamy
	_X__ Cambic	____ Inceptisol	____ Orth-	____ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	____ Entisol	____ Psamm-	_X__ Epi-		____ Coarse Silty
	____ Natric		____ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	____ Fine Silty
	____ Secondary Carbonates			____ Hapl/Hap-	_X__ 25-100 cm	____ Clayey
	____ Lamellae			____ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	____ Fine
	_X__ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	____ Slickensides or Pressure Faces			____ Usti/Ust		____ Sandy-skeletal
	_X__ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					

E. Site Interpretations **Part E Score _____**

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	____ Slight	____ Slight	____ FIHS Present
____ Moderate	_X__ Moderate	____ Moderate	_X__ FIHS Absent
_X__ Severe	____ Severe	_X__ Severe	
Reason: _____1_____	Reason: _____3_____	Reason: ____3_____	Indicator: _____

Comments: This soil is one color chip away from meeting S5 – Sandy Redox. The concentrations in the 1st and 2nd horizon were abundant enough but need to be distinct or prominent. A11 – Depleted Below Dark Surface was also close to being met, but the 2nd horizon had a chroma of 2 when a chroma of 1 is required.

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SCORING		
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E.		
Total:		

Team	**Key**
Contestant	**Pit 8**
Site	**Pfister**
Number of Horizons	**4**
Profile Depth (cm)	**100+ cm**
Nail Depth (cm)	**67 cm**

A. Site Characteristics

Part A Score _____

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	____ Alluvium	____ 0 to <2 %	____ Summit
____ Depression	____ Colluvium	_X__ 2 to <5 % *3.5%*	_X__ Shoulder
_X__ Dune	_X__ Eolian Sand	____ 5 to <9 %	____ Backslope
____ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	____ Footslope
____ Floodplain	____ Loess	____ 14 to <18 %	____ None
____ Terrace/Paleoterrace		____ 18 to <25 %	
		____ ≥25 %	

B. Soil Morphology

Part B Score _____

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
10	C	0	SGR	-	-	-	-	10YR	4	3	-	S	90	5	N	-	A	-	-	
33	C	1	SBK	-	-	-	-	10YR	5	3	-	S	90	5	N	-	B	w	1	
67	C	1	SBK	-	-	-	-	10YR	5	3	-	S	90	7	N	-	B	w	2	
100+	-	1	SBK	4	D 10YR4/4	-	FM	10YR	5	3	-	S	90	5	N	-	B	w	3	

C. Soil Hydrology and Profile Properties **Part C Score _____**

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	_X__ Very High	_X__ Very High	_X__ Negligible or Ponded	____ Very Low (<7.5 cm)	_X__ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	____ High	____ High	____ Very Low	_X__ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	____ Moderately High	____ Low	____ Medium (15.0 to <22.5 cm)	____ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	____ Moderately Low	____ Moderately Low	____ Medium	____ High (≥ 22.5 cm)	____ Class 4 (25 to <50 cm)
_X__ Very Deep (≥ 150 cm)	____ Low	____ Low	____ High		____ Class 5 (<25 cm)
	____ Very Low	____ Very Low	____ Very High	0.05*150 cm = 7.5 cm AWHC	

D. Soil Classification **Part D Score _____**

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
____ Mollic	____ Albic	____ Vertisol	____ Alb-	____ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	_X__ Sandy
_X__ Ochric	____ Argillic	____ Mollisol	____ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	____ Alfisol	____ Fluv-	____ Dystr-	____ Upper 50 cm of argillic	____ Coarse Loamy
	_X__ Cambic	_X__ Inceptisol	____ Orth-	____ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	____ Entisol	____ Psamm-	____ Epi-		____ Coarse Silty
	____ Natric		_X__ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	____ Fine Silty
	____ Secondary Carbonates			_X__ Hapl/Hap-	_X__ 25-100 cm	____ Clayey
	____ Lamellae			____ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	____ Fine
	____ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	____ Slickensides or Pressure Faces			____ Usti/Ust		____ Sandy-skeletal
	____ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					

E. Site Interpretations **Part E Score _____**

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	_X__ Slight	_X__ Slight	____ FIHS Present
____ Moderate	____ Moderate	____ Moderate	_X__ FIHS Absent
_X__ Severe	____ Severe	____ Severe	
Reason: ___1_____	Reason: _____	Reason: _____	Indicator: _____

Comments: This soil is closest to the Tivin series - mixed, mesic Typic Ustipsamments. The difference here being us calling a cambic horizon, where the Tivin is an Entisol.

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SCORING		
A.		
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E.		
Total:		

Team	**Key**
Contestant	**Pit 9**
Site	**TNC**
Number of Horizons	**5**
Profile Depth (cm)	**102+ cm**
Nail Depth (cm)	**54 cm**

A. Site Characteristics

Part A Score _____

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	__X_ Alluvium	__X_ 0 to <2 %	__X_ Summit
____ Depression	____ Colluvium	____ 2 to <5 %	____ Shoulder
____ Dune	____ Eolian Sand	____ 5 to <9 %	____ Backslope
____ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	____ Footslope
____ Floodplain	____ Loess	____ 14 to <18 %	____ None
__X__Terrace/Paleoterrace		____ 18 to <25 %	
		____ ≥25 %	

B. Soil Morphology

Part B Score _____

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
13	C	2	GR	-	-	-	-	10YR	3	2	-	SIL	8	25	N	-	A	p	-	
41	C	2	SBK	2	D 10YR3/4	FED 10YR5/2	FM, K	10YR	3	2	-	SICL	4	33	Y	-	B	tk	-	
54	C	2	SBK	5	D 10YR5/3	-	FM, K, Y	10YR	3	1	-	SICL	4	34	Y	-	B	tkny	-	
81	G	2	SBK	4	D 10YR5/3	DMX	FM, K, Y, Z	10YR	4	1	-	SICL	5	33	Y	-	B	tknyz g	-	
102+	-	2	SBK	9	D 10YR5/3	DMX	FM, K, Y	10YR	4	2	-	SICL	7	34	Y	-	B’	tknyg	-	

C. Soil Hydrology and Profile Properties **Part C Score _____**

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	____ Very High	____ Very High	____ Negligible or Ponded	____ Very Low (<7.5 cm)	____ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	____ High	____ High	__X_ Very Low	____ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	____ Moderately High	____ Low	____ Medium (15.0 to <22.5 cm)	____ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	__X_ Moderately Low	____ Moderately Low	____ Medium	__X_ High (≥ 22.5 cm)	____ Class 4 (25 to <50 cm)
__X_ Very Deep (≥ 150 cm)	____ Low	__X_ Low	____ High		__X_ Class 5 (<25 cm)
	____ Very Low	____ Very Low	____ Very High	*(123*0.2)+(27*0.2*0.5) = 27.3*	

D. Soil Classification **Part D Score _____**

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
__X_ Mollic	____ Albic	____ Vertisol	____ Alb-	____ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	____ Sandy
____ Ochric	__X_ Argillic	__X_ Mollisol	____ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	____ Alfisol	____ Fluv-	____ Dystr-	__X_ Upper 50 cm of argillic	____ Coarse Loamy
	____ Cambic	____ Inceptisol	____ Orth-	____ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	____ Entisol	____ Psamm-	____ Epi-		____ Coarse Silty
	__X_ Natric		__X_ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	__X_ Fine Silty
	__X_ Secondary Carbonates			____ Hapl/Hap-	____ 25-100 cm	____ Clayey
	____ Lamellae			__X_ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	____ Fine
	____ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	____ Slickensides or Pressure Faces			____ Usti/Ust		____ Sandy-skeletal
	__X_ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					

E. Site Interpretations **Part E Score _____**

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	____ Slight	____ Slight	____ FIHS Present
____ Moderate	____ Moderate	____ Moderate	__X_ FIHS Absent
__X_ Severe	__X_ Severe	__X_ Severe	
Reason: ____1_____	Reason: ____1_____	Reason: ____3_____	Indicator: _____

Comments: Salt crystals in horizon 4 tasted salty, which was corroborated by lab data that sodium was present. The Argillic and Natric horizons both being marked is redundant. My memory is our region has marked both if we have horizons that separately meet the requirements for the two diagnostic horizons. We'll discuss this in the coaches' meeting. Several FIHS were close to being met, but weren't, despite depletions being observed in the 2nd horizon.

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SCORING		
A.		
B.		
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E.		
Total:		

Team	**Key**
Contestant	**Pit 10**
Site	**TNC**
Number of Horizons	**6**
Profile Depth (cm)	**110+ cm**
Nail Depth (cm)	**50 cm**

A. Site Characteristics

Part A Score _____

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	__X_ Alluvium	__X_ 0 to <2 %	____ Summit
__X_ Depression	____ Colluvium	____ 2 to <5 %	____ Shoulder
____ Dune	____ Eolian Sand	____ 5 to <9 %	____ Backslope
____ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	____ Footslope
____ Floodplain	____ Loess	____ 14 to <18 %	__X_ None
____ Terrace/Paleoterrace		____ 18 to <25 %	
		____ ≥25 %	

B. Soil Morphology

Part B Score _____

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
9	C	2	GR	-	-	-	-	10YR	2	1	-	SICL	7	29	N	-	A	p	-	
34	G	2	SBK	5	D 10YR3/3	-	FM	10YR	3	1	-	SICL	3	34	N	-	B	tn	-	
50	C	2	PR	8	D 10YR3/3	-	FM, K, Y, Z	10YR	3	1	-	SICL	3	37	Y	-	B	tkssn yz	1	
69	G	2	PR	4	D 10YR5/3	-	FM, K, Y, Z	10YR	3	1	-	SICL	3	35	Y	-	B	tkssn yz	2	
87	G	2	PR or SBK	8	D 10YR5/3	-	FM, K, Y	10YR	3	1	-	SIC	3	41	Y	-	B	tkssn y	-	
110+	-	1	SBK	10	D 10YR4/3	-	FM, Y	10YR	3	1	-	SIC	3	41	N	-	B	tssy	-	

C. Soil Hydrology and Profile Properties

Part C Score _____

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	____ Very High	____ Very High	____ Negligible or Ponded	____ Very Low (<7.5 cm)	____ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	____ High	____ High	__X__ Very Low *graded back*	____ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	____ Moderately High	____ Low	__X__ Medium (15.0 to <22.5 cm)	____ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	____ Moderately Low	____ Moderately Low	____ Medium	____ High (≥ 22.5 cm)	____ Class 4 (25 to <50 cm)
__X__ Very Deep (≥ 150 cm)	____ Low	____ Low	____ High		__X__ Class 5 (<25 cm)
	__X__ Very Low	__X__ Very Low	____ Very High	*(34*0.2)+(35*0.2*0.5)+(81*0.15) = 22.45*	

D. Soil Classification

Part D Score _____

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
__X__ Mollic	____ Albic	____ Vertisol	____ Alb-	____ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	____ Sandy
____ Ochric	__X__ Argillic	__X__ Mollisol	__X__ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	____ Alfisol	____ Fluv-	____ Dystr-	__X__ Upper 50 cm of argillic	____ Coarse Loamy
	____ Cambic	____ Inceptisol	____ Orth-	____ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	____ Entisol	____ Psamm-	____ Epi-		____ Coarse Silty
	__X__ Natric		____ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	____ Fine Silty
	__X__ Secondary Carbonates			____ Hapl/Hap-	____ 25-100 cm	____ Clayey
	____ Lamellae			__X__ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	__X__ Fine
	____ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	__X__ Slickensides or Pressure Faces			____ Usti/Ust		____ Sandy-skeletal
	____ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					*Weighted average clay: 35.14%*

E. Site Interpretations

Part E Score _____

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	____ Slight	____ Slight	__X__ FIHS Present
____ Moderate	____ Moderate	____ Moderate	____ FIHS Absent
__X__ Severe	__X__ Severe	__X__ Severe	
Reason: ____1_____	Reason: ____1_____	Reason: ____1_____	Indicator: __F6 or F8_____

Comments: We did not note any cracking to the surface, otherwise the colors would make me think this could be a Vertisol. There weren't any depletions observed, or this would have met FIHS A11 and F7.

2024 Region 5 Collegiate Soil Judging Contest
Kansas State University
Sept. 23-27, 2024

SCORING		
A.		
B.		
C.		
D.		
E.		
Total:		

Team	**Key**
Contestant	**Pit 11**
Site	**TNC**
Number of Horizons	**5**
Profile Depth (cm)	**120+ cm**
Nail Depth (cm)	**56 cm**

A. Site Characteristics

Part A Score _____

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	__X_ Alluvium	__X_ 0 to <2 %	____ Summit
____ Depression	____ Colluvium	____ 2 to <5 %	____ Shoulder
____ Dune	____ Eolian Sand	____ 5 to <9 %	____ Backslope
____ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	____ Footslope
__X_ Floodplain	____ Loess	____ 14 to <18 %	__X_ None
____ Terrace/Paleoterrace		____ 18 to <25 %	
		____ ≥25 %	

B. Soil Morphology

Part B Score _____

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
10	A	2	GR	-	-	-	-	10YR	2	1	-	SICL or SIL	3	27	N	-	A	p	-	
26	G	3	SBK	2	D 10YR3/3	-	FM	10YR	2	1	-	SICL	3	36	N	-	B	t	-	
56	C	2	SBK	10	D 10YR4/3	-	FM, K, Y	10YR	3	1	-	SICL	5	34	N	-	B	tky	-	
105	C	2	SBK or PR	5	D 10YR4/6	DMX	FM, K, Y	10YR	4	2	-	SIL	4	25	Y	-	B	tkyg	-	
120+	-	2	ABK or SBK	2	D 10YR5/6	FED 10YR5/2	FM, K, Y	10YR	4	1	-	SICL	4	32	Y	-	B	tky’	-	

C. Soil Hydrology and Profile Properties **Part C Score _____**

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	____ Very High	____ Very High	____ Negligible or Ponded	____ Very Low (<7.5 cm)	____ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	____ High	____ High	____ Very Low	____ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	____ Moderately High	__X_ Low	____ Medium (15.0 to <22.5 cm)	____ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	__X_ Moderately Low	__X_ Moderately Low	____ Medium	__X_ High (≥ 22.5 cm)	____ Class 4 (25 to <50 cm)
__X_ Very Deep (≥ 150 cm)	____ Low	____ Low	____ High		__X_ Class 5 (<25 cm)
	____ Very Low	____ Very Low	____ Very High	*0.20*150=30 cm AWHC*	

D. Soil Classification **Part D Score _____**

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
__X_ Mollic	____ Albic	____ Vertisol	____ Alb-	__X_ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	____ Sandy
____ Ochric	__X_ Argillic	__X_ Mollisol	__X_ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	____ Alfisol	____ Fluv-	____ Dystr-	__X_ Upper 50 cm of argillic	____ Coarse Loamy
	____ Cambic	____ Inceptisol	____ Orth-	____ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	____ Entisol	____ Psamm-	____ Epi-		____ Coarse Silty
	____ Natric		____ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	__X_ Fine Silty
	__X_ Secondary Carbonates			____ Hapl/Hap-	____ 25-100 cm	____ Clayey
	____ Lamellae			____ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	____ Fine
	____ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	____ Slickensides or Pressure Faces			____ Usti/Ust		____ Sandy-skeletal
	__X_ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					*Weighted ave. = 33.92% clay*

E. Site Interpretations **Part E Score _____**

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	____ Slight	____ Slight	__X_ FIHS Present
____ Moderate	____ Moderate	____ Moderate	____ FIHS Absent
__X_ Severe	__X_ Severe	__X_ Severe	
Reason: ____2____	Reason: ____1_____	Reason: ____1_____	Indicator: ___F6 or A12_____

Comments: This is the Carbika series - fine, smectitic, mesic Vertic Argiaquolls.

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Kansas State University
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SCORING		
A.		
B.		
C.		
D.		
E.		
Total:		

Team	**Key**
Contestant	**Pit 12**
Site	**TNC**
Number of Horizons	**5**
Profile Depth (cm)	**120+ cm**
Nail Depth (cm)	**56 cm**

A. Site Characteristics

Part A Score _____

Landform (5)	Parent Material (5)*	Slope (5)	Hillslope Position (5)
____ Constructed	__X_ Alluvium	__X_ 0 to <2 %	____ Summit
____ Depression	____ Colluvium	____ 2 to <5 %	____ Shoulder
____ Dune	____ Eolian Sand	____ 5 to <9 %	____ Backslope
____ Interdune	____ Lacustrine Deposit	____ 9 to <14 %	____ Footslope
__X_ Floodplain	____ Loess	____ 14 to <18 %	__X_ None
____ Terrace/Paleoterrace		____ 18 to <25 %	
		____ ≥25 %	

B. Soil Morphology

Part B Score _____

Boundary		Structure		Concentrations & RMFs				Color			Texture				Efferv.	Horizonation				Total
Lower Depth	Dist.	Grade	Type	RMF Conc. %	RMF Conc. Contr.	RMF Depl. Type	Matrix Conc. Type	Hue	Value	Chroma	CF Mod.	Class	Sand%	Clay%	Y/N	Prefix	Master	Suffix	No.	Total
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40
24	C	3	GR	-	-	-	-	10YR	2	1	-	SICL	3	35	N	-	A	-	1	
54	G	2	SBK	-	-	-	-	10YR	2	1	-	SICL	5	32	N	-	A	-	2	
96	G	2	PR	-	-	-	-	10YR	2 or 3	1	-	SICL	4	34	N	2	B	t	1	
130+	-	2	PR	-	-	-	-	10YR	2	1	-	SICL	5	35	N	2	B	t	2	

C. Soil Hydrology and Profile Properties

Part C Score _____

Effective Soil Depth (5)	Hydraulic Conductivity (3-5-3)		Surface runoff (5)	Available Water Holding Capacity (5)	Soil Wetness Class (5)
	Surface Layer	Limiting Layer			
____ Very Shallow (<25 cm)	____ Very High	____ Very High	____ Negligible or Ponded	____ Very Low (<7.5 cm)	__X__ Class 1 (≥ 150 cm)
____ Shallow (25 to <50 cm)	____ High	____ High	__X__ Very Low *graded back*	____ Low (7.5 to <15 cm)	____ Class 2 (100 to <150 cm)
____ Mod. Deep (50 to <100 cm)	____ Moderately High	____ Moderately High	____ Low	____ Medium (15.0 to <22.5 cm)	____ Class 3 (50 to <100 cm)
____ Deep (100 to <150 cm)	__X__ Moderately Low	__X__ Moderately Low	____ Medium	__X__ High (≥ 22.5 cm)	____ Class 4 (25 to <50 cm)
__X__ Very Deep (≥ 150 cm)	____ Low	____ Low	____ High		____ Class 5 (<25 cm)
	____ Very Low	____ Very Low	____ Very High	*0.20*150=30 cm AWHC*	

D. Soil Classification

Part D Score _____

Epipedon (5)	Diagnostic Subsurface Horizons & Characteristics (5)*	Order (5)	Suborder (5)	Great Group (5)	Particle-Size Control Section (5)	Family Particle Size Class (5)*
__X__ Mollic	____ Albic	____ Vertisol	____ Alb-	__X__ Argi-	____ 0 cm to root limiting layer (limiting layer < 36 cm depth)	____ Sandy
____ Ochric	__X__ Argillic	__X__ Mollisol	____ Aqu-	____ Calci-		____ Loamy
____ Umbric	____ Calcic	____ Alfisol	____ Fluv-	____ Dystr-	__X__ Upper 50 cm of argillic	____ Coarse Loamy
	____ Cambic	____ Inceptisol	____ Orth-	____ Endo-	____ Upper boundary of argillic to 100 cm (contrasting particle size class)	____ Fine Loamy
	____ Gypsic	____ Entisol	____ Psamm-	____ Epi-		____ Coarse Silty
	____ Natric		__X__ Ust-	____ Fluv-	____ All of the argillic, where it is < 50 cm thick	__X__ Fine Silty
	____ Secondary Carbonates			____ Hapl/Hap-	____ 25-100 cm	____ Clayey
	____ Lamellae			____ Natr-	____ 25 cm to root limiting layer (36-100 cm depth)	____ Fine
	____ Lithologic Discontinuity			____ Psamm-		____ Very Fine
	____ Slickensides or Pressure Faces			____ Usti/Ust		____ Sandy-skeletal
	____ Wetness Features (depletions, depleted or reduced matrix, reduced iron mass)					____ Loamy-skeletal
						____ Clayey-skeletal
	____ None					*Weighted ave. = 34.16% clay*

E. Site Interpretations

Part E Score _____

Septic Tank Absorption Field (5)	Local Roads and Streets (5)	Dwellings with Basements (5)	Field Indicator of Hydric Soil (5)
____ Slight	____ Slight	____ Slight	____ FIHS Present
____ Moderate	____ Moderate	____ Moderate	__X__ FIHS Absent
__X__ Severe	__X__ Severe	__X__ Severe	
Reason: ____6____	Reason: ____1____	Reason: ____1____	Indicator: _____

Comments: This is closest to the Taver series - fine, smectitic, mesic Udertic Argiustolls. The are associated with the Punkin series. The Taver is a Punkin without a natric horizon.